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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,834	03/06/2002	Shih-Chang Hsia	MR957-1152	5815

4586 7590 08/29/2005

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ELLICOTT CITY, MD 21043

EXAMINER
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GURSHMAN, GRIGORY

ART UNIT	PAPER NUMBER
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2132

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/090,834

Applicant(s)

HSIA ET AL.

Examiner

Grigory Gurshman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 6-10 is/are rejected.
- 7) ☒ Claim(s) 2, 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: four keys for watermark extraction recited in preamble. While four keys for watermark extraction are recited in preamble, only two keys are recited in the claim limitations.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3 and 6-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Manjunath (U.S. Patent No. 6,332,030 B1).

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5. Referring to the instant claims, Manjunath discloses a method for embedding and extracting digital data in images and video (see abstract and Fig.15). Manjunath teaches that the method employs a discrete wavelet transform for embedding gray scale images, which can be as great as 25% of the host image data. A simple control parameter is used that can be tailored to either hiding or watermarking purposes, and is robust to operations such as JPEG compression. The method also uses noise-resilient channel codes based on multidimensional lattices which can provide for embedding signature data such as gray-scale or color images. Furthermore, embedded image data can be recovered in the absence of the original host image by inserting the data into the host image in the DCT domain by encoding the signature DCT coefficients using a lattice coding scheme before embedding, checking each block of host DCT coefficients for its texture content, and appropriately inserting the signature codes depending on a local texture measure. The method further provides for source coding the signature data by vector quantization, where the indices are embedded in the host by perturbing it using orthogonal transform domain vector perturbations. The transform coefficients of the parent data are grouped into vectors, and the vectors are perturbed using noise-resilient channel codes derived from multidimensional lattices. The perturbations are constrained by a maximum allowable mean-squared error that can be introduced in the host (see abstract).

6. Referring to the independent claim 1, the limitation "a watermark embedding process using a sub-band filtering, wherein original data is split into

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NxN blocks and then transformed into frequency domain" is met by Host image split into 2x2 coefficient blocks (see Fig. 1). The limitation "N/2xN/2 coefficients" is met by signature image (Fig. 1). The limitation "LL-band coefficients being quantized and inserted into HH band of a marked block of the original data" is met by Fig. 1 (see LL band of the Host image and expanded block 16). The limitation "a composite data of the original data and the watermark data being capable of being created by an inverse transformation of each block of the original data" is met by Fig. 6, which depicts inverse transformation in form of decoding (24) producing the extracted signature and recovered image.

7. Referring to claim 3, Manjunath teaches the use of the codebooks (see Fig. 7). According to Manjunath watermarking coefficients are mapped to the codebook and inserted into channel codebook, which meets the limitations of claim 3 (see Figs. 7 and 8).

8. Referring to claim 6, Manjunath teaches that watermark can be restored with a certain degree of blurring.

9. Referring to claim 7, Manjunath teaches watermark data including video data.

10. Referring to claim 8, Manjunath teaches that watermark is gray-level data.

11. Referring to claim 9, Manjunath teaches that watermark is binary data.

12. Referring to claim 10, Manjunath teaches transformation being DWT as well as DCT(see Fig. 15).

13. Claims 2, 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

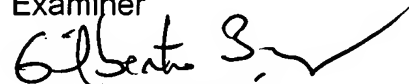
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Grigory Gurshman whose telephone number is (571)272-3803. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571)272-3799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GB

Grigory Gurshman  
Examiner



GILBERTO BARRON JR.  
SUPERVISORY PATENT EXAMINER  
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